

# **WARP KNITTED FABRIC FOR ZIPPER STITCHED THEREON**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

5           The present invention relates generally to a warp knitted fabric for a zipper stitched thereon and, more particularly to a warp knitted fabric that is bendable along a transverse orientation.

### **2. Description of the Related Art**

10           A conventional zipper is stitched on two warp knitted fabrics and the fabrics are stitched on clothing, bag or the like. Conventional warp knitted fabric is knitted by first threads, second threads and third threads, wherein the first threads form wales of the fabric and the second and the third threads are lapped over the wales along a warp orientation of the fabric.

15           The first threads of such warp knitted fabric form a fine texture such that the fabric is stronger in strength, but also is limited to be bent along the transverse orientation. The warp knitted fabrics, which the zipper is stitched thereon, are stitched on the clothing or bag along an upright orientation. If such warp fabrics are bent along the transverse orientation, the warp fabrics are wrinkled.

20           There was an invention for overcoming the drawback of the as mentioned above that provides chemical fibers to knit the fabric and provides plural of slots or seams on lateral sides of the fabric such that the fabric is able to be bent along the transverse orientation. The fabric, however, has to burn the ends of the fibers on the slots or the seams by microwave.

25           The drawbacks of the invention are that the process to fabricate it is complex and there must be specific machines to form the seams and to burn the fibers so that

the cost is higher. The warp knitted fabric is harder at where the fibers are burned and the burned portions make the warp knitted fabric easy to be damaged along the seams while a force exerted thereon. The burned portions of the warp knitted fabric also decrease the strength of the zipper stitched on the warp knitted fabrics.

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## **SUMMARY OF THE INVENTION**

The primary object of the present invention is to provide a warp knitted fabric for a zipper stitched thereon, which is capable of being bent along a transverse orientation.

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The secondary object of the present invention is to provide a warp knitted fabric, which has a lower cost and a simpler way for fabrication and the warp knitted fabric still keeps soft.

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To achieve these objects of the present invention, a warp knitted fabric is knitted by first threads, second threads and third threads, wherein the second threads and the third threads are extended along a warp-wise orientation of the warp knitted fabric and in an interlaced condition to form wales on the warp knitted fabric and widths of the third threads lapped are greater than widths of the second threads lapped. The first threads are extended along the warp-wise orientation of the warp knitted fabric and lapped over the wales to form crochets. The warp knitted fabric has a stitched portion, in which the first threads, the second threads and the third threads are knitted with each other, extended along the warp-wise orientation of the warp knitted fabric and the stitched portion has a width smaller than half of a width of the warp knitted fabric. The warp knitted fabric has a first side and a second side and the stitched portion is arranged adjacent to the first side such that the second side has a well flexibility to be bent laterally.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of a first preferred embodiment of the present  
5 invention, showing the knit of individual threads;

FIG. 2 is a perspective view of the first preferred embodiment of the present  
invention, showing the fabric without the stitched portion;

FIG. 3 is a perspective view of the first preferred embodiment of the present  
invention, showing the fabric with the stitched portion;

10 FIG. 4 is a perspective view of the first preferred embodiment of the present  
invention, showing the zipper being stitched thereon;

FIG. 5 is a perspective view of a second preferred embodiment of the present  
invention, showing another type of the stitched portion, and

FIG. 6 is a perspective view of a third preferred embodiment the present  
15 invention, showing the third type of the stitched portion.

## **DETAILED DESCRIPTION OF THE INVENTION**

As shown in FIGS. from FIG. 1 to FIG. 4, a warp knitted fabric 10 of the  
first preferred embodiment of the present invention is mainly made of chemical fibers  
20 or cotton yarns having first threads 21, second threads 22 and third threads 23.

The second threads 22 are knitted along a warp-wise orientation and in an  
interlaced condition to be lapped over two wales (the wales are stripes on the warp  
knitted fabric 10). Two of the neighboring second threads 22 are lapped in opposite  
directions. In the present invention, there are fourteen of the wales, labeled as w1,  
25 w2,.... and w14 in FIG. 2 and FIG. 3, and thirteen of the second threads 22 lapped over

two of the wales w1 and w2, w2 and w3, w3 and w4..., w13 and w14.

The third threads 23 are knitted along a warp-wise orientation and lapped over four of the wales. In the present invention, there are eleven of the third threads 23 lapped over four of the wales w1 to w4, w2 to w5,.... and w11 to w14.

5           The first threads are knitted along the wales and lapped over them as shown in FIG. 1 and FIG. 2. The first threads are also lapped over the second and the third threads 22 and 23 to form crochets. In knitting, there are left crochets, right crochets and middle crochets. In the present preferred embodiment, the first threads are middle crochets.

10           The main character of the present invention is that there are three of the first threads 21 lapped over left three of the wales w1, w2 and w3 to form a stitched portion 30.

          The warp knitted fabric 10 of the present invention, therefore, has a first side and a second side and the stitched portion 30 is arranged at the first side. The first, the  
15   second and the third threads 21, 22 and 23 in the stitched portion 30 are firmly coupled with each other so that the stitched portion 30 has a stronger strength and a lower flexibility and the second side is more flexible than the stitched portion 30. The second side, therefore, can be bent into a curve shape but the first side (the stitched portion 30) still keeps straight. Such that, a zipper (not shown) is suitable to be stitched on the  
20   stitched portion 30 and the second side of the warp knitted fabric 10 is suitable to be stitched on the clothing or bag. As shown in FIG. 4, the warp knitted fabrics 10 of the present invention have the first sides (the stitched portion 30) stitched with a zipper and the second sides stitched on a curved clothing but the warp knitted fabrics 10 still keep flat without wrinkle.

25           The main character of the present invention is to provide a warp knitted

5 fabric having a dense portion (the stitched portion) at a side thereof and a rare portion at the other side. In the first preferred embodiment, the stitched portion is arranged at the leftest side of the warp knitted fabric, but the position of the stitched portion is various. As shown in FIG. 5, the second preferred embodiment of the present invention provides a warp knitted fabric 10, which is similar to the warp knitted fabric 10 of the first preferred embodiment, having a stitched portion 30 at a position adjacent to the leftest side. The stitched portion 30 is arranged on the wales w2, w3 and w4.

10 The width of the stitched portion 30 is various, which depends on how many wales that the first threads are lapped over. For the same principle, the third threads 23 can be lapped over more or fewer wales.

In practice, it needs two of the warp knitted fabrics 10 of the present invention to be stitched with a zipper such that the warp knitted fabric 10 at the right side of the zipper having the stitched portion 30 at the left side and the knitted fabric 10 at the left side of the zipper having the stitched portion 30 at the right side and both 15 of the stitched portions 30 can be stitched with the zipper.

FIG. 6 shows the third preferred embodiment of the present invention, which a warp knitted fabrics 10 has third threads 23 lapped in an open condition. To compare with the warp knitted fabrics 10 of the first and the second preferred embodiment having the third threads 23 lapped in a close condition, the warp knitted fabrics 10 of 20 the third preferred embodiment has a better flexibility to be bent.